Het publiek belang van innovaties in het betalingsverkeer

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The transaction costs perspective on regulation and innovations in the payments system

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Abstract

Uniform and standardized payments methods considerably reduce transaction costs and therefore make payments more efficient. This is especially true for purchases and sales on the internet where all kinds of payment innovations considerably enhance the payments customer journey for e-commerce transactions. The role of the government in this respect is to safeguard the various aspects of the public interest of the payments system. Here various arguments for government intervention from public sector economics come to the fore. More specifically, a response of regulators is needed with respect to the entry of new players in the context of the revised Payments Services Directive.

Introduction

Payments between buyers and sellers bring about numerous transaction costs. Firstly, these are direct, "hard" or tangible transaction costs. Most intermediaries in the payments system will pass these costs to customers in their tariffs. But more important are the indirect or "soft" (intangible) transaction costs for customers of payment services, such as the costs of understanding how a payment must be made - depending on standardization and frequency of payments (see Williamson, 1985, pp. 60-61) -, the costs of information about the reliability of the payment product, the costs of changes in the value of the means of payment (exchange rate, inflation), the costs of falsifications and fraud, the costs of repair in the event of an incorrect payment and the costs of technical problems and theft of data for internet payments.

The major goal of innovations in payment transactions is to reduce these transaction costs as much as possible. If this reduction of costs ultimately benefits the consumer, it will generate welfare gains. Sometimes the market will automatically provide such welfare gains, but there is a public interest at stake when intervention by the government can help to maximize the welfare gains to be made. This paper discusses and elaborates the arguments that the theory of public sector economics offers for the regulation of innovations in the payments system. These arguments relate to the public good character of the payments system, to competition policy, to solving the game of trust through institutional arrangements, to external effects and to eliminating information asymmetry. Examples from the past, present and the future with emphasis to the situation in the Netherlands are reviewed.

Payments system as public good

Payment transactions have the character of a public good from the condition that the use of the payments system it is to be non-rival and non-excludable. From that perspective, intermediaries in the payments system are subject of supervision and regulation by the monetary authorities. But these authorities traditionally also offer a payment product themselves, in the form of banknotes. A number of innovations have in the past led to lower transaction costs when using banknotes. We mention some examples from The Netherlands. Statistical analysis using large samples of normal banknotes and banknotes reinforced with flax showed that the latter type of banknotes became less polluted than flaxless notes (Den Butter and Coenen, 1982). In addition, starting with the banknotes designed by Oxenaar in the late 1970's and early 1980's (the Snip (fl.100), Zonnebloem (fl.50) and the Lighthouse (fl.250)) the user is explicitly informed on the banknotes themselves on a number of security features. In addition brochures are published which clearly describe how genuine banknotes can be recognized. Moreover, banknotes have been made, through the design, good looking as it appears that when users like the notes they also pay more attention to the security features (Den Butter, 1985).

The payments system also has to do with legal protection, and thus with law enforcement as a public good. Protection of privacy is a prominent example. Here there is a balancing of transaction costs in order to come to the warranted level of privacy protection. On the one hand, infringement of privacy may mean transaction costs and loss of wealth, but on the other hand suppliers of payment products can sell information obtained with big data (recently restricted by the General Data Protection Regulation; GDPR), so that fewer or no costs for payment transactions need to be passed on to customers. Another aspect of law enforcement concerns the contribution of the payments system to the prevention of the use of money in criminal activities, such as tax fraud and money laundering. This question came to the fore in the Netherlands when it became clear in the late 1980's that the extensive holding of the banknotes of NLG 1,000 was barely traceable and that this note was mainly used for hidden payments (Boeschoten and Fase, 1988). The idea at the time was that the supply of banknotes should in any case follow demand, for whatever transactions. This argumentation has apparently changed now that the ECB has decided to withdraw the € 500 note. The same question arises for the interference of the regulators in the payments system with the bitcoins and other cryptocurrencies. The low turnover rate and use on dark web suggests that this cryptocurrency is mainly used in the shadow economy. That is why recently monetary authorities have issued warnings for the use of these cryptocurrencies (see for instance Lagarde, 2018).

Trust in the payments system

A major aspect related to the public good character of the payments system is that money has a fiduciary character. It means that the value of the money is independent of the value of the material from which the money is made. That is true for gold and silver coins and for the heavy stones, the fei, which were used as money on the island of Yap (Furness III, 1910). It also applies to the banknotes, and certainly to our bank account money that is only digitally stored somewhere as a number. It means that a reputation of reliability needs to be built for various types of money to be accepted as a means of payment. The trust that payments are handled correctly, without uncertainty and under continuous supervision, is essential to keep costs low in all kinds of (trade) transactions. In fact building up and maintaining trust in the payments system brings about a number of transaction costs.
When the fiduciary nature of the money is reduced, for example through reduced reliability of the payments system, the costs to be incurred in individual transactions will increase. This is also the case when there is insufficient transparency because, for example, the conditions of the payment products are not clearly communicated or when there are too many different payment products. This means that consumers have to make additional search costs in order to obtain the necessary information. This in turn may reduce the number of transactions and thus be harmful to the economy. It shows that, due to the fiduciary nature of the money, it is a public interest to avail of a well-functioning and transparent payments system, and to ensure the efficiency, security and reliability of the system. That is why supervision from the government, in this case delegated to monetary authorities, is indispensable. The major upshot is that the supervisory authorities of the payments system provide a good infrastructural and institutional structure in order to guarantee a solution to the game of trust which keeps transaction costs low. Such solution to the game of trust entails that all partners in a transaction keep their promises and refrain from cheating and opportunistic behaviour (Greif, 2000, 2006).

The fiduciary nature of money is not only relevant to the transactions demand for money. The precautionary demand for money also requires a stable and reliable payments system, and so does the speculative demand for money. With respect to these motives for holding money, inflation should be avoided as much as possible - not a problem in most advanced western economies at the moment - but when capital is accumulated, for instance as pension savings, trust that the monetary value is guaranteed and is not affected by fraud or stress in the financial system, is essential.

Fraud is a major threat to trust in the payments system. For example, there are more and more sophisticated ways of phishing that can harm the unsuspecting recipient of internet messages about payments by making unjust payments and / or malware infecting the computer (framework). From the perspective of transaction costs, phishing can lead to a breach of trust, in the sense that the consumer can no longer distinguish between good and fraudulent internet messages about payments. This creates a 'lemons' problem (Akerlof, 1970) in which every message is seen as potentially fraudulent. Obviously it

is a public interest that such fraud is actively battled by the authorities, for instance through good information and through taking legal action to internet fraudsters and providers.

Enhancing competition

An important reason for government intervention in securing the public interest is market failure. There must be sufficient competition between parties in the payments system, so that not an unnecessary part of the reduction of the transaction costs is appropriated as profit by those parties. On the other hand, too great a diversity of payment products and standards increases the transaction costs. Thus a middle way has to be found between competition and coordination in the regulation of innovations in the payments system.

A good example of a standard that does not hinder competition is the iDEAL internet payment scheme in the Netherlands. iDEAL offers a standard for e-commerce payments. When payments through iDEAL are made, customers are directly connected to their own bank. It implies that iDEAL is neutral with regard to the bank of the party making the payment. So it is a neat combination of getting the benefits from one standard while leaving room for competition between banks and (other) PSP's on the consumers as well as on the merchant side of the four corner model, which is the core of iDEAL. The iDEAL scheme coordinates the activities of the supply and demand side of e-payments with iDEAL. Experience shows that involvement of all stakeholders in the value chain is crucial for the success of a payment product. More in general, this holds true for coordination of different stakeholders where a good infrastructure for the consultation of, and for the discussion between these stakeholders is needed in order to avoid high transaction costs with implementation of a common product standard. These institutionalised structures of consultation are referred to as "matching zones" (Den Butter and Ten Wolde, 2014) and the Dutch Payments Association ("Betaalvereniging") acted as such matching zone in the design and implementation of iDEAL

The figures 1 and 2 illustrate the growth of iDEAL and the impact on the market as most preferred payment option of Dutch consumers for e-commerce.

Figure 1

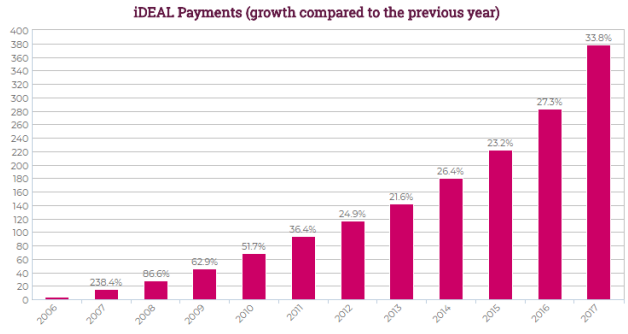
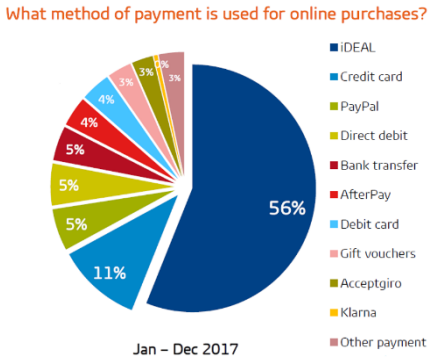


figure 2



Currently non-banks PSP's facilitate iDEAL payments in about 60 countries Another example of a standard which reduces transaction costs and leaves competition unaffected are payment platforms delivered by payment aggregators such as Adyen, PPRO and Worldpay Here all different payments systems that sellers deal with in international trade are brought together through an interface in one standard.

However, such platforms offering payment services due to economies of scale could lead to a "winner takes all" situation. Then a monopolistic position is sometimes inevitable. This is the case in China, for example, with Alipay, the payment service that is linked to the Chinese internet platform TaoBao (and internationally: Alibaba). In all such cases the dilemma for the regulating authorities is to what extent the

positive welfare effects of the monopoly or cartel in terms of lower transaction costs outweigh the negative welfare effects of less competition and higher profits

Externalities

The purpose of government intervention and regulation of external effects is to internalize these effects. For example, negative external effects can occur with innovations that make the payments system increasingly complex. Because of this complexity, a shock can quickly move through the financial system, which may bring about contagion. This negative externality can be very harmful to society as the negative consequences of contagion are passed to the society. We know this from the credit crisis. In this context Caballero and Simsek (2013) speak of a complexity externality.

On the other hand, innovation in the payments system can also have positive external effects, namely when knowledge investments in more efficient payment methods not only benefit those who develop the knowledge, but when, through knowledge transfer, others can also benefit from this. In innovation policy, it is customary to internalize these positive external effects, which lead to underinvestment in innovations, via subsidy or tax facilities.

A related reason for government intervention is when standards are anchored in such a way that it is impossible for individual innovators to introduce a different and more efficient standard. Then government policy is needed to break through such a lock-in, for example by organizing dialogue between the various stakeholders as it happens in the Dutch Payments Association.

Restoring information symmetry

Information asymmetry whereby not everyone can have the same information, is often a consequence of the high transaction costs involved in gathering information. Various forms of internet fraud, such as phishing and invoice fraud, use the incomplete information among users in the payments system. It is up to the providers of payment services to eliminate this information asymmetry as much as possible. However, the identification of hidden costs for consumers in the case of misleading information by payment service providers is also a task for regulatory authorities, i.e. in the two tier regulation in the Netherlands for the Authority Financial Markets (AFM).

Monetary policy

Innovations in the payments system are indirectly important for the monetary policy which is in Euroland currently outsourced to the ECB and has the objective of keeping inflation around 2%. In addition to interest rates, the extent to which money is used for transactions - the turnover rate of money - is decisive for reaching the inflation target. To this end, it is necessary to determine what is considered money - the money definition - and where the money creation is located. When innovations in the payments system lead to payments by ‘money’ from non-banks, these non-banks should be given the role of money-creating institutions and as such be placed under the supervision of the monetary authorities. This should therefore for example also apply to miners and creators of cryptocurrencies if this is understood as transaction ‘money’. Moreover, in all these forms of ‘money’, the question arises to what extent they should be covered by the deposit guarantee scheme. If not, it should clearly be stated that these means of payments are not considered ‘money’ and that they cannot be regarded as a trustworthy means of payment.

Future developments

Two future developments in the payments system will make an important contribution to the further reduction of transaction costs but will also require regulation from the point of view of the aforementioned aspects of public interest: (i) instant payments and (ii) the payment directive PSD2.

Instant payments

Whereas presently a processing of a payment may last a day and the European payment system is closed in the weekend, an instant payment will be processed and received within a few seconds (24 hours a day and 365 days a year), just as quickly as an email. In this case, liquidity is immediately available to the creditor, which reduces the working capital and reduces the costs for cash management. The money received can thus be immediately used again for payments, which increases the turnover rate of money. Thanks to this dynamic efficiency, the transaction costs will decrease throughout the economy. For example, it is plausible that paying for purchases between private individuals, for example at market places, which are still often done in cash - and therefore expensive and cumbersome - will soon be settled via the mobile phone. Also (large) companies and governments (think of the tax authorities) will soon receive instant payments from their customers, also in weekends.

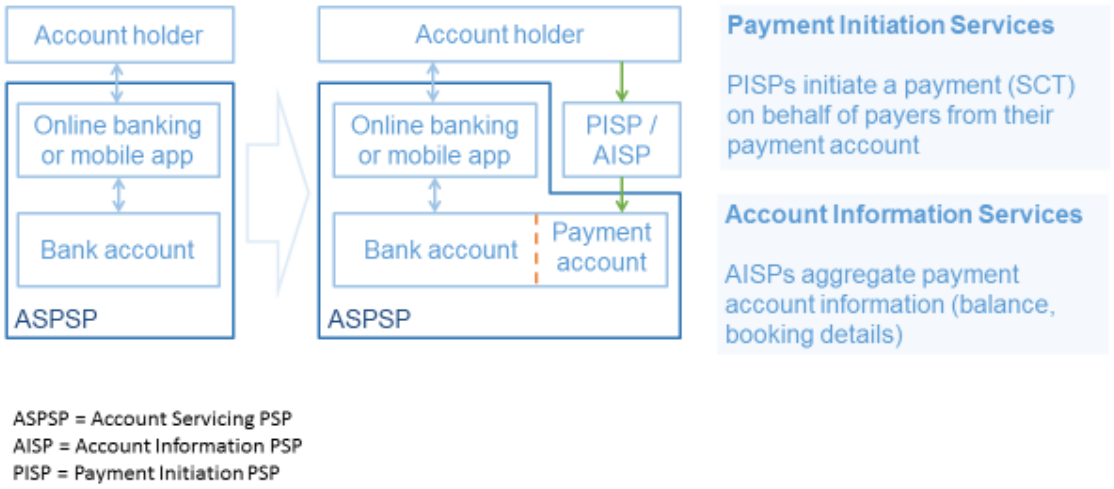
In the Netherlands, the Dutch National Forum on the Payments System, chaired by the Dutch Central Bank (DNB), in a decision in May 2015 (DNB, 2015), acknowledged the importance of an accelerated payments system for the public interest. Since June 2015, a completely new payment infrastructure has been set up under the supervision of the 'Betaalvereniging', making ínstant payments possible in May 2019 (Betaalvereniging, 2018). Both providers and users of payment services are intensively involved in this project. In most countries in the euro area, preparations are made for the introduction of instant payments. The ECB has decided to adjust its settlement system, in which banks settle their mutual positions, to the new, future situation. With Spain and Belgium, the Netherlands is unique in this respect in the sense that it is a collective solution per country, creating direct access for all customers of the payments service providers. This brings about large positive network externalities. Cooperation on the infrastructure therefore pays off. Instant payment will be within a few years the new normal, not only in the Netherlands, but also in other euro countries.

The revised Payments Services Directive (PSD2)

A second important change in the payments system is the implementation of the revised Payments Services Directive (PSD2) in all European countries. The deadline for implementation was 13 January 2018. At the end of May 2018 17 member states have implemented the PSD2 with full transposition, 4 with partial transposition and 7 without transposition completed (among which The Netherlands).

With the PSD2 the European Commission aims to stimulate innovation and to promote competition between providers and thereby increase the choice for end-users. The idea is to make online payments for consumers easier, faster and safer. The PSD2 provides two new forms of service: payment initiation and account information services. Through these services account holders can instruct third parties to make payments on their behalf or to aggregate data from the payment account (for example, but not only, for household bookkeeping). Accounting payment service providers are obliged to grant these third parties free access to the payment account of their customers. The customer determines who gets access to his or her payment account. Figure 3 outlines the new situation. The left part of the diagram illustrates the current situation: the account holder gets access to his own payment account via his online or mobile banking channel. In the PSD2 situation (the right-hand part) the account holder can provide a third party, the so-called Third Party Provider (TPP), a Payment Initiation Services Provider (PISP) or an Account Information Services Provider (AISP), access to his or her account via a separate interface outside the banking access channel.

Figure 3 Payments system before and post PSD2



This development puts the existing customer relationship of the banks under pressure. To ensure the safety of these new services, the European Banking Authority (EBA) has drawn up secondary legislation in the form of regulatory technical standards (RTS) on strong customer authentication (SCA) and common and secure communication (CSC). From the public interest of combating fraud, this regulation aims to mitigate the risk of unauthorized access of the third party to the consumer's payment account. The RTS allows the TPP to let the consumer enter the personal access codes on a non-banking website which provides this service (the so-called “direct access” method). In the Netherlands, consumers are always advised never to do this to prevent (phishing) fraud. To avoid these risks banks are in favour of the so called “redirect access“ method, entering the personal codes in the online banking portal, therefore leaving for a few seconds the app of the TPP and then quickly return. The current discussion focuses on whether both methods can bring at smooth customer journey (and which is the preferred access method). However, iDEAL has shown that a redirect to the online banking portal does not hamper a smooth customer journey, keeping consumers as much as possible away from potential phishing fraud. This may serve as an example for third party services in the context of the PSD2. The final RTS was published on 13 March 2018. Eighteen months later, on 14 September 2019, the RTS start to apply.

In the case of the Netherlands, the argument that the number of providers of payment methods will increase as a result of PSD2, is less relevant, because iDEAL already offers such a secure standard payments method, whereby cooperation and competition between banks and (60) non-banks run parallel. These could offer their own iDEAL service, making use of the name of the brand (logo) and the scale of reach. Nevertheless, the pallet of payment methods and providers will also increase for the Dutch. New applications of payments and services based on payment data are therefore to be foreseen. Automated analyses in combination with algorithms and robotic advice can reinforce this service. As a result, transaction costs for consumers may decrease because new and more efficient services are offered, and also because, for example, the search costs for these types of services are decreasing. This policy of "open banking" can therefore enhance welfare, which mirrors the public interest in executing this new directive

Pitfalls of PDS2

However, there is some doubt whether these welfare benefits can be realized in practice. For instance Reynolds (2017) argues that open banking, in addition to benefits, also entails risks for the consumer

Information asymmetry

If there is insufficient transparency about the costs and activities of the new providers, conflicts of interest may arise. The party that avails of the customer's data may have another and even opposite interest in using these data than the customer. For example, the provider can use the lead in information to seduce the consumer to make purchases that are profitable for the provider platform rather than for the customer (in getting as much as commission as possible). This abuse of information asymmetry can strengthen a possible lock-in situation for the customer and can undermine privacy protection. It is therefore very important that proper, orderly and transparent information is given to customers, such as about privacy risks (of which the GDPR will be of help). From a social point of view, these advanced payment possibilities may entail more digital exclusion resulting in enhanced inequality. This is the case if open banking does not result in a welfare increase for the non-digitally educated - in the Netherlands approximately 1.2 million citizens. Apparently from the perspective of the public interest these innovations in the payments system call for broad financial education.

Challenges for competition

The PSD2 can have a major change in the position of the banks in the payments system. 88 percent of the largest European banks foresee that PSD2 influences their business operations and 68 percent have concerns about loss of customer relations (PWC, 2016). On the other hand, banks, because of the relationship they already have with their customers, are well positioned so that they can maintain a good position (McKinsey, 2017). The prospects to keep that position are to be enhanced if the banks continue to provide added value for customers with additional services. After all, they already have the payment transaction data in house.

With respect to these services there has been an uneven playing field for years between the BigTechs and payment service providers that is expected to be dissolved with the PSD2. However, when the BigTechs take control of the global payments market, a concentration risk arises with a strong commercial focus. Several public interests mentioned above, such as the accessibility and affordability of payment services for vulnerable groups, then come under pressure. There are major challenges for safeguarding these public interests.

Over the past decades, the ecosystem of payment transactions has evolved, through a combination of cooperation and competition ('co-opetition'), into a stable stand with few or no disruptions. Within this network ecosystem, many parties provide specialized services that are crucial for end users, but are often invisible. The key element here is cooperation through agreements systems (schemes), such as those with Mastercard, Visa and iDEAL. The parties work closely together within these systems in areas such as standards and then compete with each other using the same standards. The parties that are going to offer the new PSD2 services are not looking for such a form of cooperation yet. However, the market for payment services can be seen as a two sided market, and in such a two sided market cooperation is a necessary condition to achieve maximum reduction of transaction costs. That seems still a major challenge with the introduction of PDS2

Conclusion

History teaches that innovations in payment transactions lower transaction costs and thus contribute to prosperity. Then it is necessary to recognize that various aspects of public interest are at stake in these innovations. For good regulation it is essential to know which arguments for government intervention apply and what kind of regulation is warranted in each situation where the public interest is at stake. Instant payment and PSD2 will significantly change the payment landscape. It may bring about a further contribution of the payments system to prosperity via lower transaction costs. In order to grasp this welfare gain, these new developments must be accompanied by appropriate regulations and institutionalized cooperation.

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